

## Claims

1. A magnetic stirring apparatus (1) comprising an agitator (1a), at least one permanent magnet (1d, 1e) and a float body (1f), which are connected to one another.
2. A magnetic stirring apparatus (1) comprising a bar (1b), with the agitator (1a) being arranged at the first end section (1o) of the bar (1b) and the float body (1f) being arranged at the second end section (1p).
3. A magnetic stirring apparatus (1) in accordance with one of the preceding claims characterised in that it tapers into a tip (1c) in the region of the first end section (1o).
4. A magnetic stirring apparatus (1) in accordance with one of the preceding claims characterised in that the agitator (1a) is formed symmetrically; and in that at least two permanent magnets (1d, 1e) are symmetrically arranged in the agitator (1a).
5. A magnetic stirring apparatus (1) in accordance with one of the preceding claims characterised in that the float body (1f) has an increasing inner cross-section at least along one part section in the direction of the second end section (1p).
6. A magnetic stirring apparatus (1) in accordance with one of the preceding claims characterised in that at least one vane (1h) is arranged at the bar (1b).

7. A magnetic stirring apparatus (1) in accordance with one of the preceding claims characterised in that a permanent magnet (1m) is arranged in the float body (1f).
- 5 8. A magnetic stirring apparatus (1) in accordance with one of the preceding claims characterised in that the float body (1f) is formed in an annular shape.
9. A magnetic stirring apparatus (1) in accordance with one of the preceding claims characterised in that the agitator (1a) is made in a bar shape, a star shape or a circular shape.
- 10 10. An agitating device (6) comprising a magnetic stirring apparatus (1) having a permanent magnet (1d, 1e) and a float body (1f), in particular a magnetic stirring apparatus (1) in accordance with one of the preceding claims, and comprising a magnetic drive apparatus (2), said drive apparatus (2) and said permanent magnets (1d, 1e) of the magnetic stirring apparatus (1) being mutually matched, arranged and designed such that they form a magnetic coupling.
- 15 11. An agitating device (6) in accordance with claim 10 characterised in that the drive apparatus (10) has permanent magnets (2c, 2d) which form a magnetic coupling together with the permanent magnets (1d, 1e) of the magnetic stirring apparatus (1).
- 20 12. An agitating device (6) in accordance with claim 10 characterised in that the drive apparatus (10) has a plurality of electromagnetic coils (2f) which form an electric motor together with the permanent magnets (1d, 1e) of the magnetic stirring apparatus (1).
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13. An agitating device (6) in accordance with claim 11 characterised in that the permanent magnets (1d, 1e) of the magnetic stirring apparatus (1) and the permanent magnets (2c, 2d) of the drive apparatus (2) are arranged and formed such that they mutually form a passive radial and/or axial magnetic bearing.

14. An agitating device (6) in accordance with one of the claims 10 to 13 characterised in that the magnetic stirring apparatus (1) has a toe bearing.

15. A bio-reactor comprising a magnetic stirring apparatus (1) in accordance with one of the claims 1 to 9 and/or comprising an agitating device (6) in accordance with one of the claims 10 to 14.